

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (canceled)

1 Claim 2 (currently amended): An apparatus for processing a
2 block of data representing at least one symbol, the
3 apparatus comprising:
4 a jitter compensation filter for performing a
5 filtering operation on said block of data to generate a
6 filtered block of data, the jitter compensation filter
7 having an update input for receiving a filter coefficient
8 update signal;
9 an error calculation module coupled to the update
10 input of the jitter compensation filter, the error
11 compensation module generating the filter coefficient
12 update signal from at least one signal error estimate made
13 from the filtered block of data output by the jitter
14 compensation filter; and
15 The apparatus of claim 1, further comprising:
16 a control circuit coupled to said error
17 calculation circuit module for determining as a function of
18 said at least one signal error estimate, when to output
19 said filtered block of data.

1 Claim 3 (currently amended): The apparatus of claim ‡ 2,
2 further comprising:
3 a channel compensation circuit for receiving said
4 block of data and performing a channel compensation
5 operation on at least a portion of said block of data prior
6 to the block of data being processed by said jitter
7 compensation filter.

1 Claim 5 (currently amended): The apparatus of claim 1, 2,
2 wherein the error calculation module includes:
3 means for generating a decision directed error
4 value.

1 Claim 6 (currently amended): The apparatus of claim 5,
2 wherein the error calculation module further includes:
3 An apparatus for processing a block of data representing at
4 least one symbol, the apparatus comprising:
5 a jitter compensation filter for performing a
6 filtering operation on said block of data to generate a
7 filtered block of data, the jitter compensation filter
8 having an update input for receiving a filter coefficient
9 update signal; and
10 an error calculation module coupled to the update
11 input of the jitter compensation filter, the error
12 compensation module generating the filter coefficient
13 update signal from at least one signal error estimate made
14 from the filtered block of data output by the jitter
15 compensation filter, wherein the error calculation module
16 includes:
17 means for generating a decision
18 directed error value;
19 means for generating a pilot
20 directed error value; and

21 a selection device for selecting
22 one of the decision directed error value and the
23 pilot directed error value to be output.

1 Claim 7 (currently amended): ~~The apparatus of claim 5,~~
2 ~~wherein said error estimation module further includes:~~
3 An apparatus for processing a block of data representing at
4 least one symbol, the apparatus comprising:

5 a jitter compensation filter for performing a
6 filtering operation on said block of data to generate a
7 filtered block of data, the jitter compensation filter
8 having an update input for receiving a filter coefficient
9 update signal; and

10 an error calculation module coupled to the update
11 input of the jitter compensation filter, the error
12 compensation module generating the filter coefficient
13 update signal from at least one signal error estimate made
14 from the filtered block of data output by the jitter
15 compensation filter, wherein the error calculation module
16 includes:

17 means for generating a decision directed
18 error value;

19 means for generating a non-decision directed
20 error value; and

21 a selection device for selecting one of the
22 decision directed error value and the non-
23 decision directed error value to be output.

1 Claim 8 (currently amended): The apparatus of claim 7,
2 further comprising:

3 an input buffer coupled to the jitter
4 compensation filter for storing said block of data while it

5 is being processed multiple times by said jitter
6 compensation filter.

Claims 9 and 10 (canceled)

1 Claim 11 (currently amended): The apparatus of claim 10,
2 further comprising:
3 An apparatus for processing a block of data representing at
4 least one symbol, the apparatus comprising:
5 a jitter compensation filter for performing a
6 filtering operation on said block of data to generate a
7 filtered block of data, the jitter compensation filter
8 having an update input for receiving a filter coefficient
9 update signal;
10 an error calculation module coupled to the update
11 input of the jitter compensation filter, the error
12 compensation module generating the filter coefficient
13 update signal from at least one signal error estimate made
14 from the filtered block of data output by the jitter
15 compensation filter;
16 an input buffer for storing said block of data
17 while being processed multiple times by said jitter
18 compensation filter; and
19 an output control device for determining when to
20 output the filtered block of data generated by said jitter
21 compensation filter.

1 Claim 12 (original): The apparatus of claim 11, wherein
2 the output control device includes:
3 means for determining when said block of data has
4 been filtered a fixed number of times by the jitter
5 compensation filter.

1 Claim 13 (original): The apparatus of claim 11,
2 wherein the output control device includes an
3 input for receiving the filter coefficient update signal
4 generated by said error calculation module; and
5 wherein the jitter compensation filter further
6 includes means for resetting filter coefficient values to a
7 set of initial values in response to a reset signal
8 generated by said output control device.

1 Claims 14 and 15 (canceled)

1 Claim 16 (currently amended): ~~The system of claim 15,~~
2 ~~further comprising,~~
3 A system for processing a multi-tone signal, the system
4 including:
5 a channel compensation module for performing a
6 channel compensation operation on said multi-tone signal;
7 a jitter compensation module coupled to an output
8 of the channel compensation module for performing a jitter
9 reduction operation on the channel compensated multi-tone
10 signal, wherein the jitter compensation module includes : a
11 jitter compensation filter with programmable filter tap
12 weights, and means for iteratively updating the filter tap
13 weights as a function of the jitter compensation filter
14 output; and
15 a control circuit for determining when the output
16 of the jitter compensation filter should be used as the
17 output of the jitter compensation module.

1 Claim 17 (currently amended): The system of claim ~~15~~ 16,
2 wherein the means for iteratively updating the filter tap
3 weights includes:

4 a signal error estimation circuit for generating
5 from the output of the jitter compensation filter a measure
6 of a symbol error.

1 Claim 18 (currently amended): ~~The system of claim 17,~~
2 ~~further comprising:~~

3 A system for processing a multi-tone signal, the system
4 including:

5 a channel compensation module for performing a
6 channel compensation operation on said multi-tone signal;
7 a jitter compensation module coupled to an output
8 of the channel compensation module for performing a jitter
9 reduction operation on the channel compensated multi-tone
10 signal, wherein the jitter compensation module includes : a
11 jitter compensation filter with programmable filter tap
12 weights, and means for iteratively updating the filter tap
13 weights as a function of the jitter compensation filter
14 output, wherein the means for iteratively updating the
15 filter tap weights includes a signal error estimation
16 circuit for generating from the output of the jitter
17 compensation filter a measure of a symbol error; and
18 means for resetting the jitter compensation
19 filter tap weights to an initial set of values in response
20 to the control circuit determining that the output of the
21 jitter compensation filter should be used as the output of
22 the jitter compensation filter.

1 Claim 19 (currently amended): A method of using a filter
2 having a plurality of tap weights to reduce ~~the~~ an effect.

3 of phase jitter on a block of data representing at least
4 one transmitted symbol, the method comprising the steps of:
5 i) operating said filter to filter said block of
6 samples to produce a filtered block of data;
7 ii) determining a signal error from the filtered
8 block of data;
9 iii) updating at least one of said plurality of
10 tap weights in said filter as a function of the determined
11 signal error; and
12 iv) repeating steps i, ii, and iii until a filter
13 updating stop criterion is satisfied.

1 Claim 20 (original): The method of claim 19, further
2 comprising the step of:

3 supplying the filtered block of data output by
4 said filter when said filter updating criterion is
5 satisfied to subsequent receiver circuitry.

1 Claim 21 (original): The method of claim 19, wherein said
2 filter updating stop criterion is the completion of a fixed
3 number of filtering operations on said block of data.

1 Claim 22 (original): The method of claim 21, wherein said
2 filter updating criterion is a failure in the signal error
3 to exhibit an improvement over the previous signal error.

1 Claim 23 (original): The method of claim 19, wherein said
2 step of determining a signal error includes generating a
3 decision directed error value.

1 Claim 24 (original): The method of claim 19, wherein said
2 step of determining a signal error includes generating a
3 non-decision directed error value.

1 Claim 25 (original): The method of claim 19, further
2 comprising:

3 prior to performing step i, performing a channel
4 compensation operation on said block of data.

1 Claim 26 (original): The method of claim 25, a single
2 channel compensation operation is performed on the block of
3 data in a first period of time; and
4 step i, ii and iii are performed multiple times
5 in a time period which is equal to or shorter than the
6 first time period.